

## Understanding Cisco Data Center Foundations

**Duration: 5 Days    Course Code: DCFNDU    Version: 2.0    Delivery Method: Company Event**

### Overview:

The Understanding Cisco Data Center Foundations course helps you prepare for entry-level data center roles. In this course, you will learn the foundational knowledge and skills you need to configure Cisco® data center technologies including: networking, virtualization, storage area networking, and unified computing. You will get an introduction to Cisco Application Centric Infrastructure (Cisco ACI™), automation, and cloud computing. You will get hands-on experience with configuring features on Cisco Nexus® Operating System (Cisco NX-OS) and Cisco Unified Computing System™ (Cisco UCS®).

This course does not lead directly to a certification exam, but it does cover foundational knowledge that can help you prepare for several professional-level data center courses and exams.

#### This course will help you:

Prepare for entry-level job roles in the high-demand area of data center environments

Prepare for courses that support the Cisco Certified Network Professional Data Center certification exams

Gain knowledge and hands-on skills through Cisco's unique combination of lessons and hands-on practice using enterprise-grade Cisco learning technologies, data center equipment, and software

Earn 25 CE credits toward recertification

#### Company Events

These events can be delivered exclusively for your company at our locations or yours, specifically for your delegates and your needs. The Company Events can be tailored or standard course deliveries.

### Target Audience:

Individuals looking to gain the knowledge and skills required for an entry level role in a Cisco Data Center environment.

### Objectives:

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| <ul style="list-style-type: none"> <li>■ <b>After completing this course, you should be able to:</b></li> <li>■ Describe the foundations of data center networking</li> <li>■ Describe Cisco Nexus products and explain the basic Cisco NX-OS functionalities and tools</li> <li>■ Describe Layer 3 first-hop redundancy</li> <li>■ Describe Ethernet port channels and vPCs</li> <li>■ Introduce switch virtualization</li> <li>■ Introduce machine virtualization</li> <li>■ Describe network virtualization</li> <li>■ Compare storage connectivity options in the data center</li> <li>■ Describe Fibre Channel communication between the initiator server and the target storage</li> </ul> | <ul style="list-style-type: none"> <li>■ Describe Fibre Channel zone types and their uses</li> <li>■ Describe NPV and NPIV</li> <li>■ Describe data center Ethernet enhancements that provide a lossless fabric</li> <li>■ Describe FCoE</li> <li>■ Describe data center server connectivity</li> <li>■ Describe Cisco UCS Manager</li> <li>■ Describe the purpose and advantages of APIs</li> <li>■ Describe Cisco ACI</li> <li>■ Describe Nexus Dashboard</li> <li>■ Describe the basic concepts of cloud computing</li> </ul> |
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### Prerequisites:

Attendees should meet the following prerequisites:

### Testing and Certification

Recommended as preparation for the following exams:

- Good foundation of networking protocols
- Basic knowledge of computer virtualization
- Basic computer literacy
- Basic knowledge of computer operating systems
- Basic internet usage skills
- CCNA - Implementing and Administering Cisco Solutions

- There are no exams currently aligned to this course

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#### Follow-on-Courses:

- DCACI - Implementing Cisco Application Centric Infrastructure
  - DCCOR - Implementing and Operating Cisco Data Center Core Technologies
  - DCID - Designing Cisco Data Center Infrastructure
  - DCIT - Troubleshooting Cisco Data Center Infrastructure
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## Content:

### Describing the Data Center Network Architectures

- Cisco Data Center Architecture Overview
- Three-Tier Network: Core, Aggregation, and Access
- Spine-and-Leaf Network
- Storage Area Networks
- Hypoconverged Storage Systems

### Describing the Cisco Nexus Family and Cisco NX-OS Software

- Cisco Nexus Data Center Product Overview
- Cisco NX-OS Software Architecture
- Cisco NX-OS Software CLI Tools
- Cisco NX-OS Virtual Routing and Forwarding

### Describing Layer 3 First-Hop Redundancy

- Default Gateway Redundancy
- Hot Standby Router Protocol
- Virtual Router Redundancy Protocol
- Gateway Load Balancing Protocol

### Describing Port Channels and vPCs

- Ethernet Port Channels
- Virtual Port Channels

### Describing Switch Virtualization

- Cisco Nexus Switch Basic Components
- Virtual Routing and Forwarding

### Describing Machine Virtualization

- Virtual Machines
- Hypervisor
- Virtual Machine Manager

### Describing Network Virtualization

- Overlay Network Protocols
- VXLAN Overlay
- VXLAN BGP EVPN Control Plane
- VXLAN Data Plane
- VMware vSphere Virtual Switches

### Introducing Basic Data Center Storage Concepts

- Storage Connectivity Options in the Data Center
- Fibre Channel Storage Networking
- VSAN Configuration and Verification

### Describing the Cisco MDS Family

- Cisco MDS Overview

### Describing Fibre Channel Communication Between the Initiator Server and the Target Storage

- Fibre Channel Layered Model
- FLOGI Process
- Fibre Channel Flow Control

### Describing Fibre Channel Zone Types and Their Uses

- Fibre Channel Zoning
- Zoning Configuration
- Zoning Management

### Describing Cisco NPV Mode and NPIV

- Cisco Switch Mode
- NPIV Mode

### Describing FCoE

- FCoE Architecture

### Describing Cisco UCS and UCS-X Components

- Cisco UCS Server Hardware
- Cisco Intersight
- Cisco Compute Hyperconverged with Nutanix

### Describing Cisco UCS Manager and Cisco Intersight

- Cisco UCS Manager Overview
- Identity and Resource Pools for Hardware Abstraction
- Service Profiles and Service Profile Templates
- Cisco Intersight Overview

### Automating the Data Center

- Cisco NX-OS Programmability
- Cisco NX-OS Model-Driven Programmability
- Cisco Nexus API
- Python
- Ansible
- HashiCorp Terraform

### Describing Cisco Nexus Dashboard

- Cisco Nexus Dashboard Overview
- Cisco Nexus Dashboard Fabric Controller Overview

### Describing Cisco ACI

- Cisco ACI Overview
- Cisco ACI Topology and Hardware
- Cisco ACI Policy Model
- Cisco ACI External Connectivity Options
- Cisco ACI and VMM Integration
- Cisco ACI and Layer4-Layer 7 Integration
- Cisco ACI Management and Automation
- Cisco ACI Anywhere

### Describing Cloud Computing

- Cloud Computing Overview
- Cloud Deployment Models
- Cloud Computing Services

### Labs

- Discovery Lab 1: Explore the Cisco NX-OS CLI
- Discovery Lab 2: Explore Topology Discovery
- Discovery Lab 3: Configure HSRP
- Discovery Lab 4: Configure vPCs
- Discovery Lab 5: Configure VRF
- Discovery Lab 6: Explore CoPP and Spanning Tree on Cisco Nexus Switches
- Discovery Lab 7: Install VMware ESXi and vCenter
- Discovery Lab 8: Configure VSANs
- Discovery Lab 9: Validate FLOGI and FCNS
- Discovery Lab 10: Configure Zoning
- Discovery Lab 11: Review Unified Ports on a Cisco Nexus Switch and Implement FCoE

- Discovery Lab 12: Explore the Cisco UCS Server Environment
- Discovery Lab 13: Configure a Cisco UCS Service Profile
- Discovery Lab 14: Configure Cisco NX-OS with APIs
- Discovery Lab 15: Explore the Cisco UCS Manager XML API Management Information Tree
- Discovery Lab 16: Explore Cisco ACI

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### Further Information:

For More information, or to book your course, please call us on 00 20 (0) 2 2269 1982 or 16142

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